REMARKS/ARGUMENTS

Claims 1-20 were previously pending in the application. Claims 21-23 are added herein. Assuming the entry of this amendment, claims 1-23 are now pending in the application. Applicants hereby request further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Miscellaneous Amendments

In page 2 of the Office Action, the Examiner objected to the second paragraph of page 1 of the specification. In response, page 1 of the specification has been amended as requested by the Examiner to update the cited co-pending applications and their filing date.

The Specification has also been amended to correct inadvertent typographical errors on pages 27 and 52.

Prior-Art Rejections

In pages 3-4, the Examiner rejected claims 1-6, 12, and 16-20 under 35 U.S.C. 102(b) as being anticipated by Lin et al. (U.S. Pat. App. Pub. 2003/0065811 A1). In pages 5-7, the Examiner rejected claims 7-11 and 13-15 under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Voelker (U.S. Pat. No. 5,856,981). For the following reasons, Applicants submit that all of the now-pending claim are allowable over the cited references.

Claims 1 and 17

In rejecting claim 1, the Examiner argued that Lin discloses all of the claimed features of claim 1, including the step of representing information in a network data structure, "wherein the network data structure comprises, for each link in the network and each node or other link in the network, a representation of a minimum amount of protection bandwidth required to be reserved on said each link to restore service upon failure of said node or other link." The Examiner cited paragraph 35 and Fig. 6 as specifically teaching this step.

Although Lin teaches using a disclosed method to "allocate the capacity required for each link in the network" in paragraph 36, Lin does not teach the claimed network data structure.

According to the Examiner, Lin also discloses the step of "determining, using the network and service data structures, whether the new service requires additional protection bandwidth to be reserved on any link in the network." In this regard, Applicants note that while Lin might teach "[a]djusting the bandwidth on links in the network to accommodate [a] new connection" in paragraph 50, Lin does not teach using a network data structure and a service data

structure to determine whether additional protection bandwidth is required, as required by claim 1.

Thus, it cannot be said that Lin teaches all the requisite elements of claim 1. Therefore, Applicants submit that claim 1 is allowable over Lin. For similar reasons, Applicants submit that claim 17 is also allowable over Lin. Since claims 2-16 and 21-23 depend variously from claim 1, and claims 18-20 depend variously from claim 17, it is further submitted that those claims are also allowable over Lin.

Claim 5

In rejecting claim 5, the Examiner argued that Lin discloses all of the claimed features of claim 5, including that "each of the nodes in the network has all of the information in the network data structure." The Examiner cited paragraph 61 of Lin as specifically teaching this feature. However, notwithstanding the Examiner's assertion, the cited paragraph describes ways of signaling a failure and says nothing about any network-data-structure information the nodes might maintain. In fact, the only information storage that Lin teaches for nodes in a network involves routing tables and unit tables, which store information about adjacent nodes and links, and not about the entire network (Lin, paragraphs 63-66).

Thus, it cannot be said that Lin teaches all the requisite elements of claim 5. Therefore, Applicants submit that this provides further grounds for the allowability of claim 5 over Lin.

Claim 6

In rejecting claim 6, the Examiner argued that Lin discloses all of the claimed features of claim 6, including "in response to the new service request, determining a restoration path for the new service in the network using the network data structure." The Examiner cited paragraphs 50-51 and Fig. 6 of Lin as specifically teaching this feature. However, the cited sections do not teach determining a restoration path using the claimed network data structure.

Lin teaches that "if a new connection is required," then "a pair of link or node-disjoint paths . . . would be assigned to support the new connection" (Lin, paragraph 50). Lin does not teach how the routes, whether primary or protection, would be assigned, and thus, it cannot be said that Lin teaches using the claimed network data structure in determining a restoration path.

Thus, it cannot be said that Lin teaches all the requisite elements of claim 6. Therefore, Applicants submit that this provides further grounds for the allowability of claim 6 over Lin.

Claim 7

In rejecting claim 7, the Examiner argued that Voelker teaches a network data structure that "is an array of vectors, wherein . . . each vector in the array corresponds to a different link in the network" and "each vector in the array has a plurality of entries corresponding to the nodes and links in the network." The Examiner cited column 7, lines 50-55, of Voelker as specifically teaching this feature. However, the cited section does not teach the requisite network data structure.

Rather, the cited section of Voelker discloses a table that comprises a series of entries with "each entry representing a connection that could not be established." Assuming, *arguendo*, that the table is an array and the entries are vectors, which Applicants do not admit, there is no indication there that each represented connection "has a plurality of entries corresponding to the nodes and links in the network," as required by that feature of claim 7. Thus, it cannot be said that Voelker teaches this requisite element of claim 7.

According to the Examiner, Voelker also discloses "a first vector corresponding to a first link," wherein "each entry in the first vector corresponding to a node or other link identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of the node or other link." The Examiner cited column 7, lines 56-63, of Voelker as specifically teaching this feature. However, the cited section does not teach the requisite first vector.

Instead, the cited section of Voelker teaches seeking routes for "connections still left without a working path" (Voelker, column 7, lines 56-61). There is no indication that the representation of one of those connections (i) corresponds to a first link, and (ii) comprises a plurality of entries, wherein each entry (a) corresponds to a node or other link in the network, and (b) identifies the minimum amount of protection bandwidth required to be reserved on the first link to restore service upon failure of the node or other link, as required by that feature of claim 7. Thus, it cannot be said that Voelker teaches this requisite element of claim 7.

According to the Examiner, Voelker also discloses a service data structure that "is a primary path vector having a plurality of entries corresponding to the nodes and links in the network, wherein . . . each entry of the primary path vector identifies whether the corresponding node or link is part of the primary path for the new service." The Examiner cited column 6, lines

43-51 and 56-59, of Voelker as specifically teaching this feature. However, the cited section does not teach the requisite primary path vector.

The cited section of Voelker teaches tables whose entries correspond to the links "owned" or "controlled" by a node, wherein each entry either (i) describes capacity parameters for the corresponding link (Voelker, column 6, lines 43-51), or (ii) describes one failure condition for the corresponding link (Voelker, column 6, lines 56-59). There is no teaching that the tables or their entries indicate whether anything is "part of the primary path for the new service," as required by claim 7. Furthermore, since each entry of the Voelker tables corresponds only to a link, and each table corresponds to only one node, it cannot be said that Voelker teaches a vector having a plurality of entries corresponding to the nodes in the network. Thus, it cannot be said that Voelker teaches this requisite element of claim 7.

Therefore, Applicants submit that this provides further grounds for the allowability of claim 7 over Lin in view of Voelker. Since claims 8-10 depend variously from claim 7, it is further submitted that this provides further grounds for the allowability of those claims over Lin in view of Voelker.

Claim 10

In rejecting claim 10, the Examiner stated that "Lin teaches wherein the vector addition operation is applied between the primary path vector and each vector in the array corresponding to each different link in a restoration path for the new service," citing column 7, lines 12-25. Applicants assume the Examiner meant to refer to Voelker, rather than Lin, as allegedly teaching this feature. Applicants request clarification if this assumption is not correct. In fact, column 7, lines 12-25, of Voelker does not teach the requisite operation.

The cited section of Voelker discloses a list of contingent paths calculated in anticipation of a particular failure condition, wherein each entry represents one contingent path. For reasons similar to those discussed above in reference to claim 7, it cannot be said that the cited section discloses the requisite array of vectors, *i.e.*, the claimed network data structure. Even assuming, *arguendo*, that the disclosed table is an array of vectors, which Applicants do not admit, there is no disclosure in the cited section of performing any operation on each entry of the table involving a primary path vector, let alone applying vector addition between the primary path vector and each entry in the table. Thus, it cannot be said that Voelker teaches this requisite element of claim 10.

Therefore, Applicants submit that this provides further grounds for the allowability of claim 10 over Lin in view of Voelker.

Claim 21

New claim 21 includes the features of original claim 7, and further provides that each vector in the network data structure array has a plurality of entries corresponding to all the nodes and links in the network. Neither Lin nor Voelker disclose such a network data structure. Therefore, this provides further grounds for the allowability of claim 21 over the prior art of record.

Claim 22

New claim 22 includes the features of original claim 7, and further provides that the service data structure is a primary path vector having a plurality of entries corresponding to all the nodes and links in the network, wherein each entry of the primary path vector identifies whether the corresponding node or link is or is not part of the primary path for the new service. Neither Lin nor Voelker disclose such a service data structure. Therefore, this provides further grounds for the allowability of claim 22 over the prior art of record.

Claim 23

New claim 23 includes the features of original claim 7, and further provides that at least one entry of the primary path vector identifies that the corresponding node or link is not part of the primary path for the service. Neither Lin nor Voelker disclose such a primary path vector. Therefore, this provides further grounds for the allowability of claim 23 over the prior art of record.

Fees

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17 or credit any overpayment to Mendelsohn & Associates, P.C. Deposit Account No. 50-0782.

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

In view of the above amendments and remarks, Applicants believe that the now-pending claims are in condition for allowance. Therefore, Applicants believe that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Fees

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The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Respectfully submitted,

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